

WHAT IS CLAIMED IS:

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1. A semiconductor device, comprising:
a contact plug including a tungsten film in an upper portion of the contact plug, formed on a semiconductor substrate;
a storage electrode including a tantalum nitride film formed on and contacting an upper surface of said tungsten film;
a capacitor dielectric film including a tantalum oxide film formed on and contacting an upper surface of said tantalum nitride film; and
a cell plate electrode including a tantalum nitride film formed on and contacting an upper surface of said tantalum oxide film.

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2. A semiconductor device, comprising:
a storage electrode including a tantalum nitride film formed on a semiconductor substrate;
a capacitor dielectric film including a tantalum oxide film formed on and contacting an upper surface of said tantalum nitride film; and
a cell plate electrode including a tantalum nitride film formed on and contacting an upper surface of said tantalum oxide film and a copper film formed on and contacting an upper surface of said tantalum nitride film.

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3. A semiconductor device, comprising:
a storage electrode including an indium oxide film formed on a semiconductor substrate;
a capacitor dielectric film including a tantalum oxide film formed on and contacting an upper surface of said indium oxide film; and
a cell plate electrode including an indium oxide film formed on and contacting an upper surface of said tantalum oxide film.

4. The semiconductor device according to claim 3, wherein said storage electrode further includes a tantalum nitride film formed beneath and contacting a lower surface of said indium oxide film.

5. The semiconductor device according to claim 3, wherein said cell plate electrode further includes a copper film formed on said indium oxide film.

6. The semiconductor device according to claim 5, wherein said cell plate electrode further includes a tantalum nitride film formed between said indium oxide film and said copper film, contacting both said indium oxide film and said copper film.

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